Land Reclamation, Highwall Treatment

PRACTICE INTRODUCTION

USDA, Natural Resources Conservation Service - practice code 456

DEFINITION

Highwall Treatment is reducing the harmful effects of highwalls that result from surface mining.

PRACTICE INFORMATION

This practice is used to treat highwalls resulting from past mining activities and is associated with reclamation and reconstruction on abandoned mined areas. Highwall treatment applies to areas where highwalls resulting from past mining are:

- A hazard to health and safety
- Unstable and contributing to excessive erosion
- Degrading water quality, landscape aesthetics, and other natural resources

The purpose of highwall treatment is to reduce highwall heights or slopes to satisfactory levels to eliminate safety hazards, control erosion, establish vegetation, improve landscape aesthetics, and basically help return the topography of the area to something similar to the pre-mine condition.

Additional information including design criteria and specifications are in the local NRCS Field Office Technical Guide.

The following pages list the conservation effects expected to occur when this practice is applied. These effects are subjective and somewhat dependent on variables such as climate, terrain, and soil. Users are cautioned that these effects are estimates that may or may not apply to a specific site.

CONSERVATION PRACTICE PHYSICAL EFFECT WORKSHEET

NOTE: *recorded in Microsoft word 6.0 - use tabs to change cells/fields*

STATE	Iowa	FIELD OFFICE		DATE	5/15/97

PRACTICE: 456 Land Reclamation, Highwall Treatment	NOTES:
RESOURCE: SOIL **RESOURCE CONCERN: EROSION**	**Help Message: Click on form field for choice lists.** **Refer to Microsoft Word Users Guide (Creating a form)**
RESOURCE INDICATORS	**PHYSICAL EFFECTS**
SHEET AND RILL	significant reduction in sheet and rill erosion
WIND	significant reduction in wind erosion
EPHEMERAL GULLY	significant reduction in ephemeral gully erosion
CLASSIC GULLY	situational concerning classic gullies
STREAMBANK	significant reduction in streambank erosion
IRRIGATION INDUCED	N/A
SOIL MASS MOVEMENT	significant reduction in mass movement of soil
ROADBANK/CONSTRUCTION	situational concerning const./roadbank erosion
OTHER	
RESOURCE CONCERN: **SOIL CONDITION**	
SOIL TILTH	insignificant
SOIL COMPACTION	insignificant
SOIL CONTAMINATION	
• SALTS	moderate reduction in soil salinity
• ORGANICS	moderate decrease in organic contaminates
• FERTILIZERS	moderate reduction in contaminates from fertilizer
• PESTICIDES	moderate reduction in pesticide contam./soil
• OTHER	
DEPOSITION/DAMAGE	
• ONSITE	significant reduction/onsite deposition damage
• OFFSITE	significant decrease/offsite deposition damage
DEPOSITION/SAFETY	
• ONSITE	significantly improve onsite safety/deposition
• OFFSITE	sign. improve offsite safety hazard/deposition
OTHER	
RESOURCE: **WATER** RESOURCE CONCERN: **WATER QUANTITY**	
SEEPS	insignificant
RUNOFF/FLOODING	slight decrease in runoff/flooding
EXCESS SUBSURFACE WATER	insignificant
INADEQUATE OUTLETS	slight improvement in H20 outlet concern
WATER MGT. IRRIGATION	
• SURFACE	N/A
• SPRINKLER	N/A
WATER MGT. NON-IRRIGATED	significant improvement in moisture use
RESTRICTED FLOW CAPACITY (H20 convey.)	
• ONSITE	situational regarding onsite drainage
• OFFSITE	situational concerning drainage/offsite
RESTRICTED STORAGE	sign. reduction in sedimentation of H20 storage

RESOURCE: **WATER** RESOURCE CONCERN**: WATER QUALITY**	
RESOURCE INDICATORS	**PHYSICAL EFFECTS**
GROUNDWATER CONTAMINANTS	
• PESTICIDES	insignificant
• NUTRIENTS AND ORGANICS	insignificant
• SALINITY	insignificant
• HEAVY METALS	insignificant
• PATHOGENS	insignificant
• OTHER	
SURFACE WATER CONTAMINANTS	
• PESTICIDES	insignificant
• NUTRIENTS AND ORGANICS	insignificant
• SUSPENDED SEDIMENTS	insignficant
• LOW DISSOLVED OXYGEN	insignificant
• SALINITY	insignificant
• HEAVY METALS	insignificant
• WATER TEMPERATURE	insignificant
• PATHOGENS	insignificant
AQUATIC HABITAT SUITABILITY	significant improvement in Aqua. Hab. Suit.
OTHER	
RESOURCE: **AIR** RESOURCE CONCERN: **AIR QUALITY**	
AIRBORNE SEDIMENT AND SMOKE PARTICLES	
• ONSITE SAFETY	sign. decrease in airborn sed.&smoke part./safety
• OFFSITE SAFETY	sign. decrease in airborn sed.&smoke part./safety
• ONSITE STRUCT. PROBLEMS	sign. decrease in struc. problems/dust and smoke
• OFFSITE STRUCT. PROBLEMS	sign. decrease in struc. problems/dust and smoke
• ONSITE HEALTH	sign. decrease in onsite health prob./dust&smoke
• OFFSITE HEALTH	sign. improvement in offlsite health
AIRBORNE SEDIMENT CAUSING CONVEYANCE PROBLEMS	sign. decrease in airborn sediment/convey. prob.
AIRBORNE CHEMICAL DRIFT	insignificant
AIRBORNE ODORS	insignificant
FUNGI, MOLDS, AND POLLEN	N/A
OTHER	
RESOURCE CONCERN: **AIR CONDITION**	
AIR TEMPERATURE	insignficant
AIR MOVEMENT (windbreak effect)	insignificant
HUMIDITY	N/A
OTHER	

RESOURCE: **PLANT** RESOURCE CONCERN: **SUITABILITY**	
RESOURCE INDICATORS	**PHYSICAL EFFECTS**
SITE ADAPTATION	sign. improvement in plant suitability/site adapt
PLANT USE	sign. improvement in plant suit. for intended use
OTHER	
RESOURCE CONCERN: **CONDITION**	
PRODUCTIVITY	sign. improvement in plant cond./ productivity
HEALTH, VIGOR, SURVIVAL	sign. improvement in plant health,vigor, survival
OTHER	
RESOURCE CONCERN: **MANAGEMENT**	
ESTAB., GROWTH, HARVEST	sign. improvement in plant estab.,growth,harvest
NUTRIENT MANAGEMENT	sign. improvement in plant nutrient management
PESTS	insignificant
THREAT/ENDANGERED PLANTS	situational concerning threat/endanged plants
OTHER	
RESOURCE: **ANIMAL** RESOURCE CONCERN: **HABITAT**	
FOOD	sign. improvement in animal habitat/food supply
COVER/SHELTER	sign. improvement in animal habitat/cover,shelter
WATER (QUANTITY & QUALITY)	slight improvement in animal habitat/water
OTHER	
RESOURCE CONCERN: **MANAGEMENT**	
POPULATION BALANCE	slight improvement in animal mgt./pop. balance
THREAT/ENDANGERED ANIMALS	situational concerning threat./endangered animals
HEALTH	slight improvement in animal mgt./health
OTHER	
RESOURCE: **HUMAN** RESOURCE CONCERNS**: ECONOMIC CONSIDERATIONS**	
PLAN / COST EFFECTIVENESS	significantly cost effective
CLIENT FINANCIAL CONDITION	significantly cost effective
MARKETS FOR PRODUCTS	N/A
AVAILABLE LABOR	sign. increase in labor requirement
AVAILABLE EQUIPMENT	situational regarding equipment concerns

RESOURCE: **HUMAN** RESOURCE CONCERN: **SOCIAL CONSIDERATIONS**	
RESOURCE INDICATORS	**PHYSICAL EFFECTS**
PUBLIC HEALTH AND SAFETY	sign. improvement in public health & safety
PRIVATE/PUBLIC VALUES	sign. improvement in private/public values
CLIENT CHARACTERISTICS	N/A
RISK TOLERANCE	moderate risk involved
TENURE	N/A
OTHER	
RESOURCE CONCERN: **CULTURAL CONSIDERATIONS**	
ABSENCE/PRESENCE OF CULTURAL RESOURCES	situational regarding cultural resources
SIGNIFICANCE OF CULTURAL RESOURCES	situational regarding cultural resources
MITIGATION OF NEGATIVE CULTURAL RES. IMPACTS	situational regarding cultural resources
OTHER	